# Securing your sources

In this issue we have reports on further major investments in III-Vs in the USA: Title III for GaAs and a $5M ARPA program for InP. So it would seem that 1995 has begun well not only for the participants, but also for III-Vs. Events further afield, such as the earthquake in Kobe, however, may contrive to negate some of this progress.

A couple of years ago, the electronics manufacturing world was in a panic when it learned that the Sumitomo resins plant in Japan had been put out of action by fire. This woke up many to the fragile structure of the electronics industry through its reliance on single sources of supply. Over the years the supplier base had shrunk until virtually everyone got their resins from the one supplier. It doesn't take a genius to figure out what might happen if this plant had had to be closed. If this critical link in the long chain of semiconductor production were to be broken catastrophe would ensue.

At the time of the fire, the worldwide media was awash with "told you so" stories and promises of "it mustn't happen again", etc, etc. Once the plant was back in action it all quietened down again and it was business as usual. Meanwhile, even though the plant has possibly the best fire precautions etc. in the world, you can't be 100% sure of it never happening again here, there or anywhere.

Fire is, however, not the only catastrophe that can befall a semiconductor plant. As the events of January 17th in Kobe, Japan, were to prove, the unpredictability of earthquakes in terms of location and severity can leave human preparedness woefully inadequate. Early that day, the Sumitomo Electric Semiconductor Division's facilities in the Kansei district in Itami, were struck by an earthquake and badly damaged.

In TFR Vol. 6, No. 5, (pp 12-16) in Sumitomo's Company Profile, Sumitomo's facilities in Itami City were shown and described: "We believe this to be the world's largest plant devoted to compound semiconductor materials...serving the needs of more than 300 companies in over 20 countries".

When writing this editorial we had heard of no casualties and we hope that all the workers on-site or at-home were safe. The timing of the quake before the rush-hour was about the only aspect that could be said to have been fortunate about it. However, like most plants of this type, manufacture is a round-the-clock operation and so some staff must have been present.

Sumitomo Electric's Semiconductor Division is a major supplier of a wide range of materials to the home and foreign markets. For example, it is the world's leading supplier of SI LEC GaAs (see page 30) and is Japan's largest merchant supplier of MBE epiwafers. At a time of strong demand for these and related products, the suspension of production will be a bitter blow to the company and its customers. As you might expect, every effort is being made to restore production as quickly as possible to ensure that the contracts are fulfilled.

Earthquakes in Japan are a way of life but this disaster in an area of low quake expectancy has frightened many companies. To the outside observer, however, it may always been a puzzle why two of the world's best-known areas of electronics are astride fault lines - Japan and California's Silicon Valley.

Might we therefore expect that the Kobe quake might trigger an increase in the exodus of manufacturing and R&D from these areas to less risky places?

The Itami facility was, I believe, the first III-V facility to be struck by an earthquake but it may not be the last. So we can expect that this "test case" will be closely watched by everyone around the world. Not all of the lessons to be learned are yet clear so we await further news with anticipation.

Whatever happens later, for the short-term it would appear that III-Vs materials supply might be about to suffer a crisis worse than that which shook the community when Wacker withdrew 4 years ago. As is often the case, however, what is a crisis for someone can be an opportunity for others.

As a recent study of the market confirmed, Japanese companies including Sumitomo Electric, are also major suppliers of InP to the world. In particular, given the relative lack of capacity in N. America, it is such foreign sources which predominately supply this product.

Recently the demand for InP devices for optoelectronics and electronics has risen greatly. It seems, therefore, extra timely that the underlying logic to preserve indigenous SI LEC GaAs suppliers should also be extended to cover InP. However, for some time, the USA has had but one company whose sole product line is InP - Crystacomm. This is part-Japanese owned, however. Other companies have already begun developing commercial supply and more will follow but presently even taken together they would be hard pressed to supply even one local customer.

As you can read in this issue, Title III is set to once and for all establish SI LEC GaAs as a manufactured product in the USA. What effect this will have on prices and the world markets is guesswork so far. But with the Kobe earthquake as a timely reminder of the fragility of supply, Title III can be said to have ensured the security of US supply of GaAs and therefore could be money well spent. Time will tell and you can rely us to be closely monitoring progress.

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